



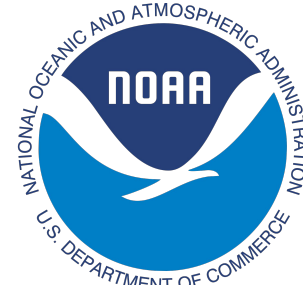
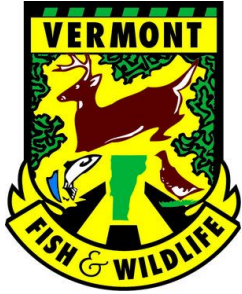
Connecticut River Atlantic Salmon Commission

Sea Lamprey Nest Surveys Training Materials



CRASC

Collaborators



Connecticut River
Conservancy

CRASC

General Information

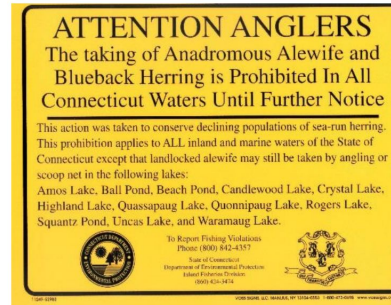
The Connecticut River Atlantic Salmon Commission (est. 1983) evaluate methods and provide guidance on restoring migratory fish species in the Connecticut River and its tributaries. Technical committees within the CRASC, comprised of Government and state agencies, Universities, NGOs and other stakeholders, address specific topics such as American Shad, Fish Passage, River Herring, Sturgeons, Sea Lamprey and Habitat. Through research, technical committee members advice the commission on fisheries restoration efforts such as the following:



Dam Removals



Fishway Construction



Fishery Closures

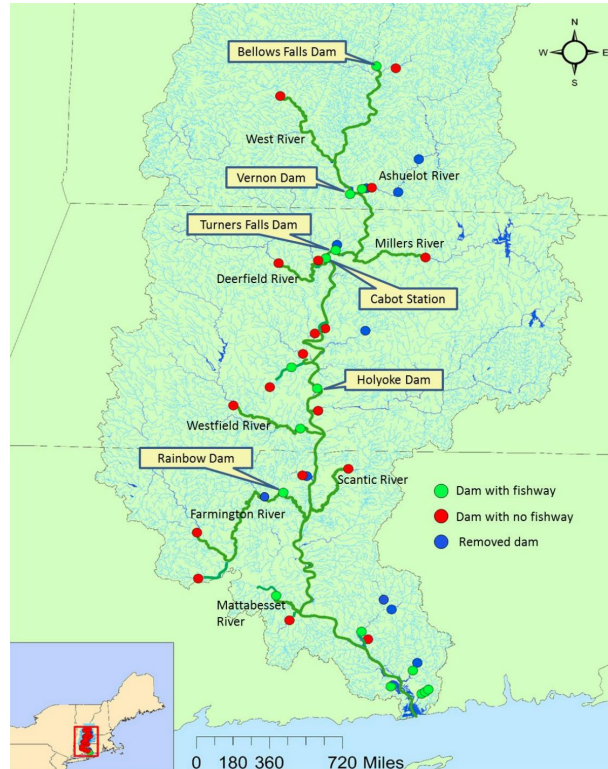


Research

CT River

Dams on the River and Tributaries

There are 15 dams on the Connecticut River, 12 of which are hydropower projects, and over 1,000 smaller dams on its tributaries.



Fish have been deeply impacted by centuries of dam building, particularly anadromous species like American shad, sea lamprey, blueback herring, alewives and Atlantic salmon that return from the ocean to spawn in our rivers.

Sea Lamprey

General Information

- Sea lampreys are anadromous fish, meaning they live out their lives in salted water, such as oceans and seas, and travel up freshwater rivers and streams to spawn (reproduce).
- While they might be parasitic animals in the sea, when sea lampreys travel upstream into freshwater, they stop eating; they have only one thing in mind, building a nest for their offspring.
- Sea lampreys die shortly after spawning, and their carcasses play a vital role in providing necessary marine nutrients into freshwater ecosystems.



Sea Lamprey

Resources



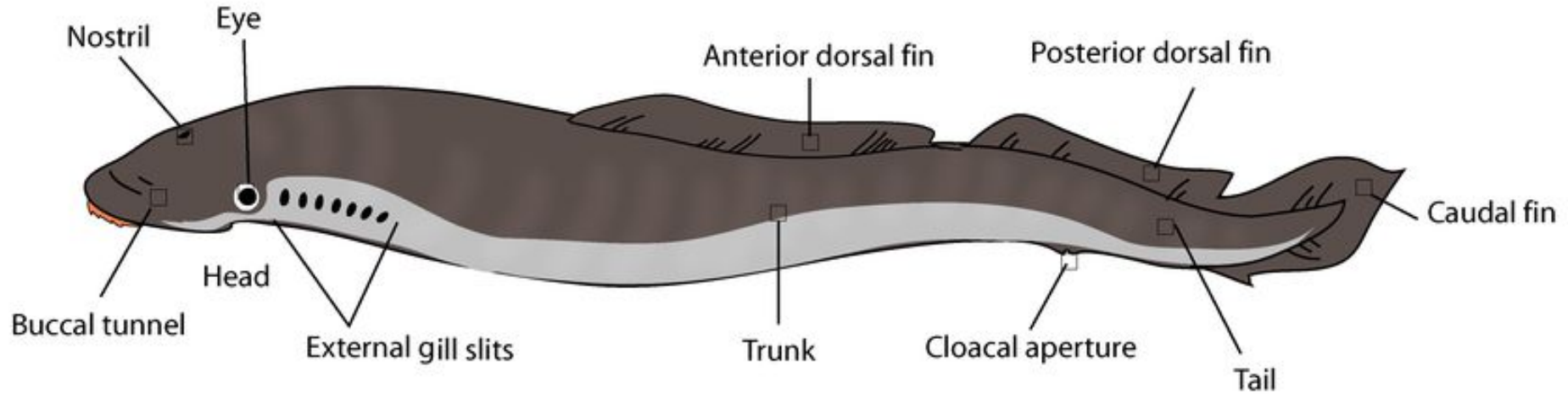
Educational resources around migratory fish, including fishways (ladders/lifts) you can visit in person: [Read Here!](#)

The difference between our native sea lamprey, and invasive Lake Champlain lamprey: [Read Here!](#)

Read about CRC's advocacy work around hydropower dam facilities and their relicensing process: [Read Here!](#)

Sea Lamprey

Anatomy



Sea Lamprey

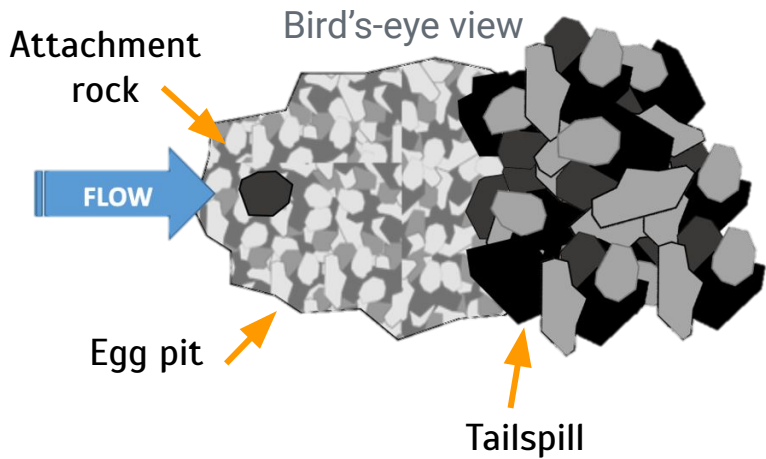
Nesting Behavior



Spawning lamprey will use their mouths to suction grab and move rocks to form their nests.

Nests are build in depths ranging between 10 and 20 inches.

Sea Lamprey Nest Anatomy

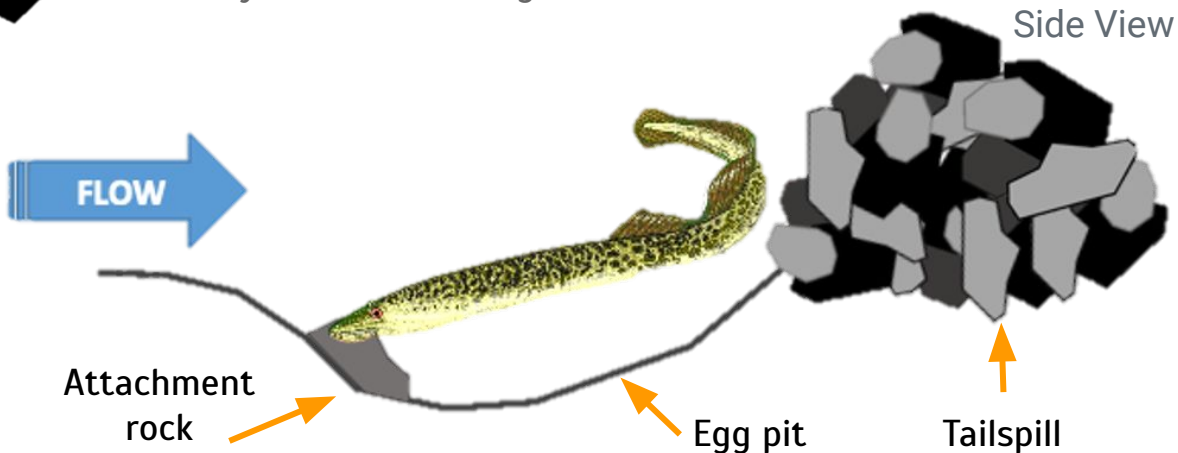


Sizes of tailspill stones vary (depending upon what's available). Typically, 1 – 5" in diameter.

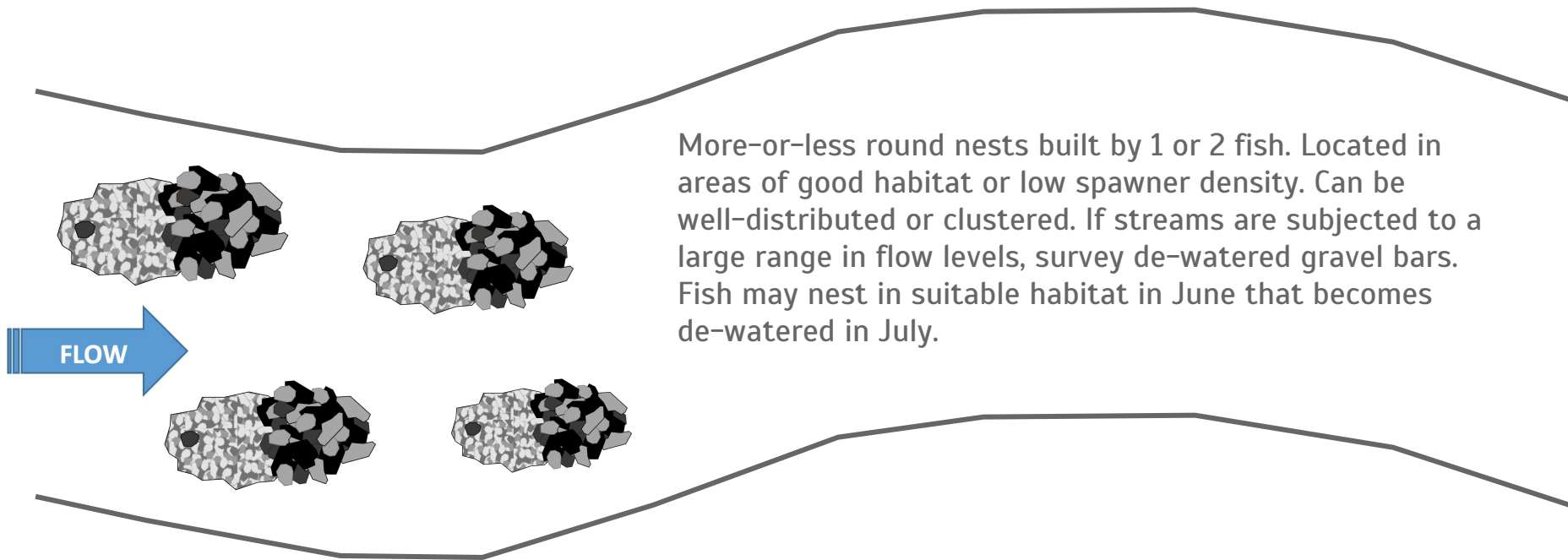
Egg pit substrate is comparable to gravel and sand.

If nests are still fresh, the stones in the tailspill are typically a different color (usually lighter) than the surrounding substrate.

Lampreys use attachment rocks to hold on against the current while spawning. The attachment rock may not always be there during observations



Sea Lamprey Single Nests

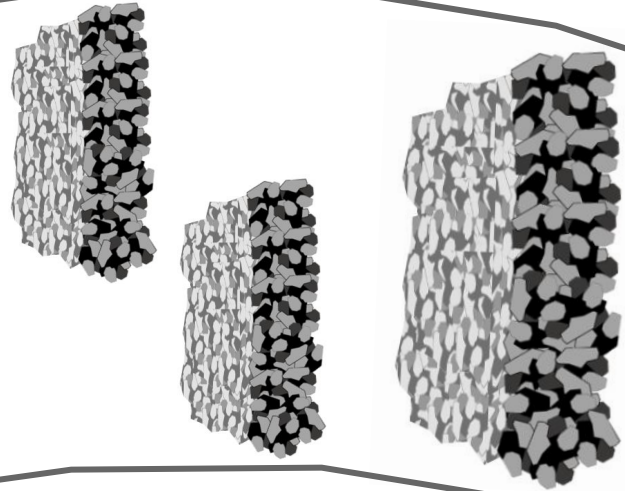


More-or-less round nests built by 1 or 2 fish. Located in areas of good habitat or low spawner density. Can be well-distributed or clustered. If streams are subjected to a large range in flow levels, survey de-watered gravel bars. Fish may nest in suitable habitat in June that becomes de-watered in July.

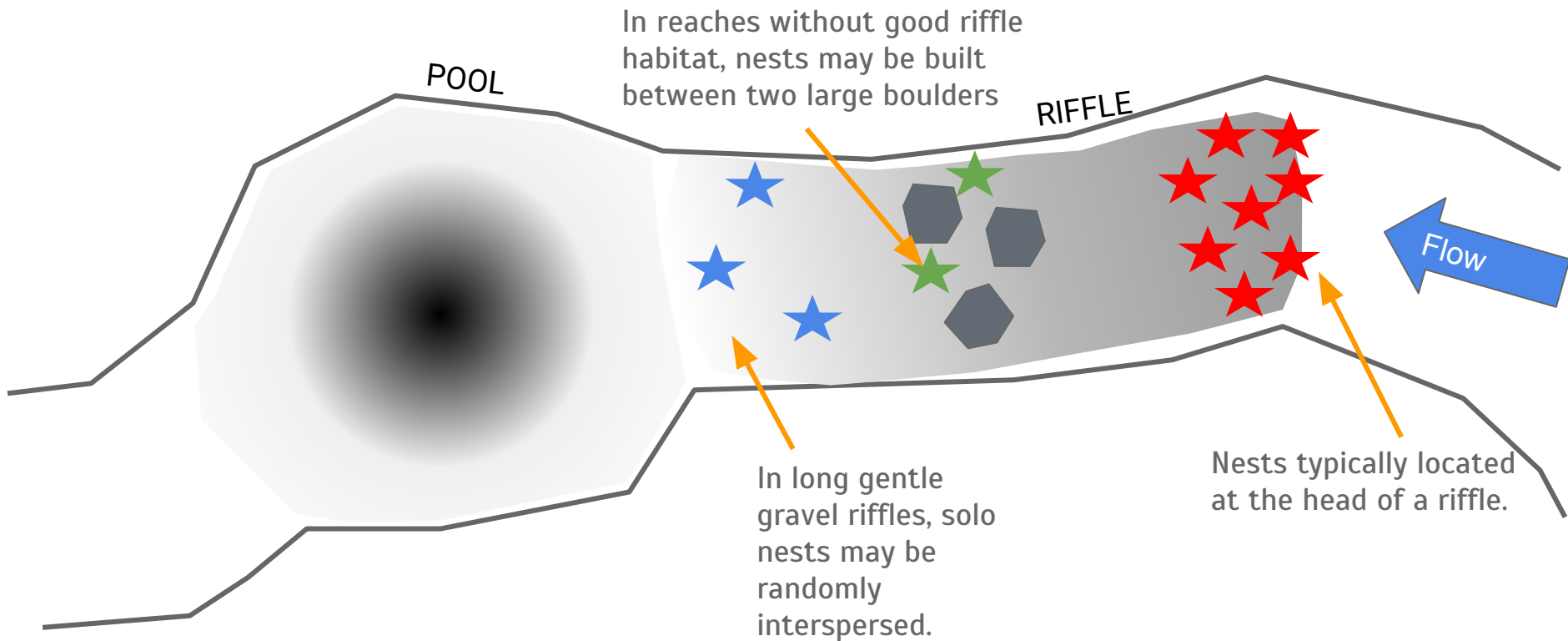
Sea Lamprey Community Nests

Trench-like nests that may begin as single nests but soon merge together. Located in areas of scarce habitat and/or high spawner density, such as below dams and in headwaters of small tributaries (e.g. the upper most locations of gravel beds). Some nests may go bank-to-bank.

FLOW

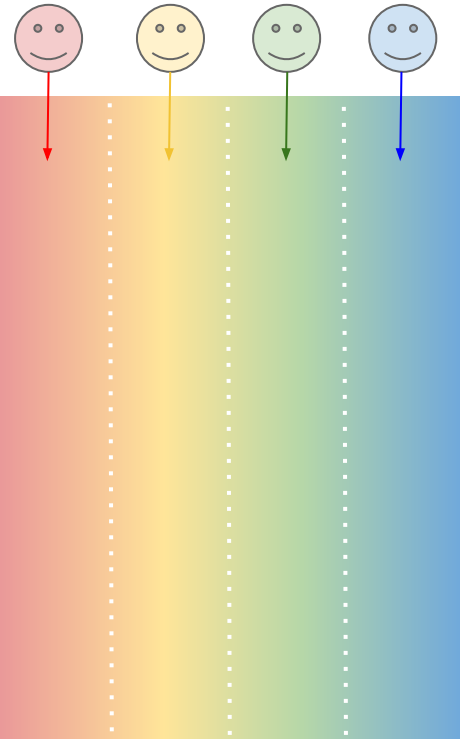


Sea Lamprey Nest Location



Nest Surveys

Methods and Tips



- Before starting, surveyors will enter relevant data on the field sheet (date, start time, surveyors names, weather, DO...etc).
- Surveyors should divide the width of the stream by the number of staff/volunteers able to identify nests.
- Surveyors should be aware of their surroundings, have proper support (walking sticks provided) and foot wear. Surveyors should prepare to get wet, even past the hips at times. Riffles can be treacherous and slippery!
- Surveyors should stay in their lanes when possible, and stay in line with other surveyors to avoid nest duplication or large gaps.
- When a potential nest is spotted, surveyors should call to others so the nest can be accurately analysed before it is confirmed. Surveyors may leave their lanes to inspect new finds, as long as they return to their lanes where they left off, before continuing the survey.

Nest Surveys

Methods and Tips

- To help age nests, surveyors can gently feel tailspills and pits to observe substrate. Fresh tailspills will not be covered in algae due to fish activity. Recent nests should have clear gaps between the stones; older nests will have sediment build up between stones.
- Male lampreys will build “trial” nests and not complete it before moving on to another area. Those nests will look unfinished and untidy (large rocks in the pit, low tailspill). Trial nests should not be counted; in case of doubt, enter coordinates and notes in the field sheet and take photos.



- Once a nest has been confirmed, a surveyor will enter GPS coordinates and relevant notes on the field sheet. Surveyors should also save the coordinates on the GPS memory card if possible
- Surveyors should return to their lane once the data collection is complete.
- At the end of the survey, the field sheet should be completed.

Nest Surveys

Materials

- 1 clipboard with field sheets and 1 GPS per team
- Polarized sunglasses
 - ◆ Polarized to see under the surface
 - ◆ CRC can provide extras to volunteers if needed
- Waders or work boots or closed-toed sneakers
 - ◆ No sandals
- Daypack
- Rain gear/Hat
 - ◆ Dress for weather
- Sunscreen/bug spray
- Camera, the one on your phone will work.
- Walking stick provided by staff
 - ◆ You may bring your own.
- Water bottle
- Change of clothes in the car
- Optional: Dive mask to better inspect nests



Nest Surveys

Practicing Good River Etiquette and Staying Safe!

- Never wade into high and swift-moving water. Always have walking support regardless of how the stream looks from land or at the beginning of the stretch. Walking sticks should be provided by staff.
- Expect to get wet! Hips down will be submerged at times, but up to chest is possible too!
- Protect yourself and the habitat by avoiding eroded stream banks and staying aware of your surroundings. Your safety is a priority!
- Avoid surveying alone; always have a buddy with you.
- Bring a cellular device, you should always be able to call for help.
- Be aware of private property. Don't argue with landowners even if you are on the river legally.
- Friendly conversations with people on the stream are good. You can learn a lot!